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Commonwealth of Kentucky
Environmental and Public Protection Cabinet
Office of Housing, Buildings and Construction
Division of Building Code Enforcement
Terry Slade, Division Director
101 Sea Hero Rd.
Frankfort, Kentucky 40601-5404
Telephone: (502) 573-0373
Fax: (502) 573-1059

Kentucky Energy Conservation Workbook For Residential and Commercial Buildings

Signature of Applicant_____

Facility Name_____

Building Name_____

Project Address_____

City_____County_____

Project Owner_____

Address_____

Phone_____

Project Architect_____

Address_____

Phone_____

Project Engineer_____

Address_____

Phone_____

Project Contractor_____

Address_____

Phone_____

Introduction:
This workbook is set up to demonstrate compliance with the 2006 International Energy Conservation Code (IECC). The 2006 IECC can be obtained by calling ICC @ 1-800-786-4452 or try your local library. There are 3 ways to demonstrate compliance for residential buildings and 2 ways to demonstrate compliance for commercial buildings.

Kentucky's climate zone is Zone 4

Method 1 (residential & commercial buildings)

Method 1 is through the World Wide Web. The website is www.energycodes.gov
Upon entering the site please download the 4.1.3 version of Res Check (residential compliance) or 3.5.2 version for Com Check-Ez (commercial compliance).After downloading software, please select from the menu bar "Code" and select the 2006 IECC or ASHREA 90.1, 2004. Go through the program entering all appropriate values under the **Envelope, Lighting and Mechanical** tabs. At the end of this exercise the program will give a pass or fail and percent thereof assessment. Please note that questions can be asked by e-mail under the "Technical support" on the left side of web page or by dialing (800) 270-2633
Compliance Results - The bottom right corner of the screen displays color-coded compliance results as a percentage by which performance is better or worse than the minimum required by the code. For example, a +10.0% in green on white would indicate the proposed design passes the envelope requirements with heating plus cooling loads 10% below the maximum allowed. A -5.0% in red on white would indicate the loads exceed those allowed and must be reduced by roughly 5% to achieve compliance. **Upon the compliance assessment, print out a compliance report which includes Envelope, Mechanical and Lighting requirements and submit to the Division of Building Code Enforcement**.

Method 2 (residential only, (R-2, R-3, R-4) 3 stories or less)

Method 2 is derived from completing Table on page 4.

1) On the left side of the Table "Proposed" fill in the proposed R values or U-factors for each component of construction.
2) Please note: The R-values proposed shall not be less than what is indicated on the right side of Table under ***Minimum Required R-Value/ U-factor***
3) Please fill out the U-factor for all exterior doors and windows (a.k.a. fenestration). The manufacturer of the window or door will be able to supply this number. Please note that the U-factors can not be greater than what is indicated on the right side of the Table under **Maximum U-factor**
4) Using this same method of determining *U-Factors* complete the table for all aspects of construction that are applicable to your proposed building using the Tables referenced in Table 502.2.below each element of construction.
5) Fill out the all sections which are applicable on pgs 8-10 (Air leakage, Mechanical systems, Service Water and Lighting)

Method 3 Total UA Alternative (residential only, (R-2, R-3, R-4) 3 stories or less)

1) Turn to page 7 of the workbook (Envelope Design Worksheet for Residential Buildings) and indicate all the *U values* from Table 402.1.3 and enter them into the "Required U-factor" under the "**Required"** side of page
2) Under the "**Proposed"** side of this page indicate the R-value or U-factors of all new construction, and multiply this factor by the area for each element of construction. Please note that the ceiling, wall are net areas and do not include doors, windows, skylights etc.

3) Total all the “Proposed UA for each element of construction and indicate in the “Total Proposed UA” box on the bottom left side of page.
4) On the **Required** side of page take the Required U-factor (Table 402.3.1) and multiply by the area to determine the required UA for each element of construction.
5) If the **Proposed UA** is equal to or less than the **Required UA** then compliance with the 2006 IECC envelope requirements has been achieved. If Proposed is greater then adjust the U-Values to lower values until the value is less than or equal to the Required UA.
6) Fill out the all sections which are applicable on pgs 8-10 (Air leakage, Mechanical systems, Service Water and Lighting)

Method 4 Prescriptive (Commercial Only)

1) Turn to page 5 and refer to Table 502.2 (1) and under the proposed column simply indicates exactly what R-values are required for each component of construction. Please note that the values shall not be lesser than the values under the Zone 4 column.
2) Table 502.3 indicates the U-factors for all exterior doors and windows (fenestration). Values for proposed windows and exterior doors can exceed the values of table 502.3. Refer to table below *Please note: The PF can be determined by referencing Section 502.3.2, 2006 IECC.*
3) Fill out the all sections which are applicable on pgs 10–12 (Air leakage, Mechanical systems, Service Water and Lighting

(THE BOTTOM PORTION OF THIS PAGE SHALL BE PROVIDED FOR ALL BUILDINGS)

ADMINISTRATION AND ENFORCEMENT (CHAPTER 1)

SCOPE AND GENERAL REQUIRMENTS (101,102, AND 104)

RESIDENTIAL BUILDINGS (101.2, 202)

DETACHED ONE OR TWO FAMILY DWELLING _____

GROUP R-2, R-4, OR TOWNHOUSES;

(3 STORIES OR LESS IN HEIGHT) _____

COMMERCIAL BUILDINGS (101.2, 202) _____

FENESTRATION AREA ≤40%
(502.3.1, TABLE 502.3) YES/ NO

PRESCRIPTIVE PRACTICE (506) _____

TOTAL BUILDING PERFORMANCE _____

ASHRAE/IESNA 90.1 (501) _____

APPLICABILTY (101.4, 101.5 _____

LOW ENERGY BUILDINGS (101.5.2)
PEAK ENERGY USE <3.4 BTU/H FT^2 (1.0 W/FT^2) YES/ NO
UNCONDITIONED YES/ NO

SUBTANTIATING DATA (102, 103 AND 104)

CERTIFICATION (401.3 RESIDENTIAL ONLY) _____

MATERIALS, SYSTEMS, EQUIPMENT (102) _____

FENESTRATION PRODUCT RATING (102.1.3) _____

FOUNDATION INSULATION (102.2.1) _____

INFORMATION ON CONSTRUCTION DOCUMENTS _____

ENVELOPE DESIGN WORKSHEET FOR RESIDENTIAL BUILDINGS

COMPONENT DESIGN (402.1.1) AND
U- FACTOR ALTERNATIVE (402.1.3)

(Method 2)

PROPOSED	REQUIRED

DESCRIPTION	INSULATION DEPTH		PROPOSED	MINIMUM REQUIRED R-VALUE[b] / U–FACTOR (T402.1.1 & T402.1.3)
CEILIINGS	NA		R-	38
WOOD FRAME WALLS	NA		R-	13
FLOORS OVER UNCONDIOTIONED SPACE	NA		R-	19
BASEMENT WALLS	NA		R-	10/13
SLAB EDGE	UNHEATED	ft	R-	10 / 2 ft
	HEATED	ft	R-	10 / 2 ft.
CRAWL SPACE WALLS		ft	R-	10 / 13

DESCRIPTION	PROPOSED U-FACTOR	MAXIMUM U -FACTOR
FENESTRATION (INCLUDES OPAQUE DOORS)	U-	U -.40
SKYLIGHT	U-	U-.60

a FOR COMPONENT DESIGNS (402.1.1) AND DESIGNS BY U-FACTOR ALTERNATIVE (402.1.3), REQUIRED R-VALUES / U-FACTORS SHALL BE IN ACCORDANCE WITH THE COMPONENT REQUIREMENTS OF TABLE 402.1.1 AND THE EQUIVALENT U-FACTORS REQUIREMENTS OF TABLE 402.1.3 OF THE IECC, RESPECTIVELY (PAGE 5 OF THIS BOOKLET)
b. (R-VALUE= 1/U-FACTOR)
c. FOR GLAZED FENERSTRATION AND OPAQUE DOOR EXEMPTIONS SEE SECTION 402.3 OF THE IECC

Table 502.2 (1)
BUILDING ENVELOPE REQUIREMENTS- OPAQUE ASSEMBLIES

	PROPOSED	CLIMATE ZONE 4
ROOFS		
INSULATION ENTIRELY ABOVE DECK		R-15 CI
METAL BUILDINGS (WITH R-5 THERMAL BLOCKS[A])[B]		R-19
ATTIC AND OTHER		R-30
WALLS, ABOVE GRADE		
MASS (CONCRETE/BLOCK)		NR
METAL BUILDING[B]		R-5.7 CI
METAL FRAMED		R-13
WOOD FRAMED AND OTHER		R-13
WALLS BELOW GRADE		R-13
WALLS, BELOW GRADE		
BELOW GRADE WALL[A]		NR
FLOORS		
MASS (CONCRETE/BLOCK)		R-10 CI
JOIST/FLOORING		R-19
SLAB-ON-GRADE FLOORS		
INHEATED SLABS		NR
HEATED SLABS		R-7.5 FOR 12 IN. BELOW
OPAQUE DOORS		
SWINING		U - 0.70
ROLL-UP OR SLIDING		U – 1.45

For SI: 1 inch = 25.4 mm, CI= Continuous Insulation, NR - No Requirement

a. Thermal blocks are a minimum R-5 of rigid insulation, which extends I-inch beyond the width of the purlin on each Side, perpendicular to the purlin
b. Assembly descriptions can be found in Table 502.2(2).
c. R-5.7 ci maybe substituted with concrete block walls complying with ASTMC90, ungrouted or partially grouted at 32 in. or less on center vertically and 48 in. or less on center horizontally, with ungrouted cores filled with material having a maximum thermal conductivity of *OA4* Btu-in./h-ft' F.
d. When heated slabs are placed below grade, below grade walls must meet the exterior insulation requirements for perimeter insulation according to the heated slab-on-grade construction.
e. Insulation is not required for mass walls in Climate Zone 3A located below the "Warm-Humid" line, and in Zone 3B.

Table 502.3
BUILDING ENVELOPE REQUIREMENTS: FENESTRATION

	PROPOSED	CLIMATE ZONE 4
VERTICAL FENESTRATION (40% MAXIMUM ABOVE-GRADE WALL		
FRAMING MATERIALS OTHER THAN METAL WITH OR WITHOUT METAL REINFORCEMENT OR CLADDING		
U-FACTOR		4.0
METAL FRAMING WITH OR WITHOUT THERMAL BLOCK		
CURTAIN WALL /STOREFRONT U-FACTOR		.50
ENTRANCE DOOR U-FACTOR		.85
ALL OTHER U-FACTORS[A]		.55
SHGC-ALL FRAME TYPES		
SHGC: PF < 0.25		.40
SHGC: .025 ≤ PF < 0.5		NR
SHGC: PF ≥ 0.5		NR
SYLIGHTS		
GLASS U-FACTOR		.60
GLASS SHGC		NR
PLASTIC U-FACTOR		.90
PLASTIC SHGC		NR

NR = No Requirement.
PF = Projection factor (See Section 502.3.2).
a. All others includes operable windows, fixed windows and non-entrance doors

TABLE 402.1.1
INSULATION AND FENESTRATION REQUIRMENTS PER COMPONENT

	PROPOSED	ZONE 4
FENESTRATION U-FACTOR		.40
SKYLIGHT[B] U-FACTOR		.60
GLAZED FENESTRATION U-FACTOR		NR
CEILING R-VALUE		38
WOOD FRAME WALL R-VALUE		19 or 13 +5[g]
MASS WALL R-VALUE		13
FLOOR R-VALUE		30[f]
BASEMENT [c] WALL VALUE		10 / 13
SLAB[d] R-VALUE AND DEPTH		10, 2ft.
CRAWL SPACE [d] WALL R-VALUE		10 / 13

For SI: 1 foot = 304.8 mm.

a. R-values are minimums. U-factors and SHOC are maximums. R-19 shall be permitted to be compressed into a 2 x 6 cavity.
b. The fenestration *U-factor* column excludes skylights. The SHOC column applies to all glazed fenestration.
c. The first R-value applies to continuous insulation, the second to framing cavity insulation; either insulation meets the requirement.
d. R-5 shall be added to the required slab edge R-values for heated slabs.
e. There are no SHOC requirements in the Marine zone.
f. Or insulation sufficient to fill the framing cavity, R -19 minimum.
g. "13+5" means R-13 cavity insulation plus R-5 insulated sheathing. If structural sheathing covers 25 percent or less of the exterior, insulating sheathing is not required where structural sheathing is used. If structural sheathing covers more than 25 percent of exterior, structural sheathing shall be supplemented with insulation sheathing of at least R-2.

TABLE 402.1.3
EQUIVALENT U-FACTORS[a]

	PROPOSED	CLIMATE ZONE 4
FENERSTRATION U-FACTOR		.40
SKYLIGHT U-FACTOR		.60
CEILING U-FACTOR		.030
FRAME WALL U-FACTOR		.082
MASS WALL U-FACTOR		.141
FLOOR U-FACTOR		.047
BASEMENT WALL U-FACOTR		.059
CRAWL SPACE WALL U-FACTOR		.065

a. Nonfenestration U-factors shall be obtained from measurement, calculation or an approved source

ENVELOPE DESIGN WORKSHEET FOR RESIDENTIAL BUILDINGS
TOTAL UA ALTERNATIVE (402.1.4)

PROPOSED	REQUIRED[A]

CEILINGS AND FLOORS OVER OUTSIDE AIR

DESCRIPTION	INSULATION R-VALUE[B]	U-FACTOR[B]	X AREA	=UA	REQUIRED U-FACTOR[B]	X AREA	=UA
CEILINGS			ft^2			ft^2	
			ft^2				
FLOORS OVER OUTSIDE AIR			ft^2				

CEILING: TOTAL AREA

ft^2

SKYLIGHTS

DESCRIPTION	INSULATION R-VALUE[B]	U-FACTOR[B]	X AREA	=UA	REQUIRED U-FACTOR[B]	X AREA	=UA
	--		ft^2			ft^2	
	--		ft^2				

SKYLIGHTS: TOTAL AREA

ft^2

WALLS

DESCRIPTION	INSULATION R-VALUE[B]	U-FACTOR[B]	X AREA	=UA	REQUIRED U-FACTOR[B]	X AREA	=UA
WALLS			ft^2			ft^2	
			ft^2				

WALLS: TOTAL AREA

ft^2

VERTICAL FENESTRATION (WINDOWS & DOORS)

DESCRIPTION	INSULATION R-VALUE[B]	U-FACTOR[B]	X AREA	=UA	REQUIRED U-FACTOR[B]	X AREA	=UA
WINDOWS	--		ft^2			ft^2	
	--		ft^2				
DOORS	--		ft^2				
	--		ft^2				
SLIDING GLASS DOORS	--		ft^2				
	--		ft^2				

VERTICAL FENESTRATION: TOTAL AREA

ft^2

FLOORS & FOUNDATIONS

DESCRIPTION	INSULATION R-VALUE[B]	U-FACTOR[B]	X AREA OR PEREMETER	=UA	REQUIRED U-FACTOR[B]	X AREA	=UA
FLOORS OVER UNCONDITIONED SPACE	NA		ft^2			ft^2	
BASEMENT WALLS	NA		ft^2			ft^2	
UNHEATED SLABS	ft^2		ft^2			ft^2	
HEATED SLABS	ft^2		ft^2			ft^2	
CRAWL SPACE WALLS	ft^2		ft^2			ft^2	
			ft^2				

TOTAL PROPOSED UA[C] **TOTAL PROPOSED** UA[C]

A REQUIRED U-FACTORS SHALL BE IN ACCORDANCE WITH THE EQUIVALENT U-FACTORS FROM TABLE 402.1.3 OF THE IECC
B R-VALUE = 1/U-FACTOR
C IN ORDERTO DEMONSTRATECOMPLIANCE WITH THE IECC, TOTAL PROPOSED UA MUST BE LESS THAN OR EQUAL TO THE TOTAL REQUIRED UA

BASIC REQUIREMENTS (CHAPTERS 4, 5, 6 AND 8)
(THE ENVELOPE, MECHANICAL, SERVICE WATER HEATING AND ELECTRICAL SYSTEM REQUIRMENTS THAT FOLLOW ARE MANDATORY FOR ALL BUILDINGS)

PLEASE INDICATE IN EACH LINE "YES" IF IN COMPLIANCE OR "NA" IF NOT APPLICAPLE

MOISTURE CONTROL AND AIR LEAKAGE (402.4, 502.4)

AIR LEAKAGE (MANDATORY)

FENESTRATION AIR LEAKAGE (402.4.2, 502.4.1, 502.4.1) _____

BUILDING THERMAL EMNVELOPE

RECESSED LIGHTING (402.4.3, 502.4.7) _____

STAIRWAY/ELEVATOR SHAFT OPENINGS (502.4.4 COMMERCIAL ONLY) _____

LOADING DOCKS (502.4.5 COMMERCIAL ONLY) _____

VESTIBULE (502.4.6 COMMERCIAL ONLY _____

MOISTURE CONTROL (402.5, 502.5) _____

MECHANICAL SYSTEMS (403, 503)

DUCT AND PIPING SYSTEMS (MANDATORY)

DUCT INSULATION (403.2.1, 503.2.7) _____

DUCT SEALING/PIPE INSULATION (403.2.2, 503.2.7, & 403.3, 403.4, 503.2.8) _____

APPLICABLE TO ALL HVAC EQUIPMENT (MANDATORY)

DESIGN CONDITONS (302) _____

EQUIPMENT AND SYSTEM SIZING (403.6, 503.2.2) _____

TEMPERATURE/HUMIDITY CONTROL (403.1, 503.2.4.1) _____

HEAT PUMP CONTROL (403.1.1, 503.2.4.1.1) _____

EQUIPMENT PERFORMANCE (TABLE 404.5.2 (1), 503.2.3) _____

APPLICABLE TO ALL COMMERCIAL HVAC SYSTEMS

LOAD CALCULATIONS (503.2.1) _____

OFF-HOUR CONTROLS (503.2.4.3) _____

SHUTOFF DAMPER CONTROLS (503.2.4.4) _____

ENERGY RECOVERY VENTALATION SYSTEMS (503.2.6) _____

SYSTEM COMPLETION/BALANCING (503.2.9) _____

SIMPLE HVAC SYSTEMS

THE MECHANICAL SYSTEM ARE UNITARY OR PACKAGED HVAC SYSTEMS LISTED IN TABLE 503.2.3(1)- 503.2.3(5) OF THE IECC THE COMPLEX HVAC SYSTEMS REQUIREMENTS DO NOT APPLY

ECONOMIZERS (503.1) _____

HYDRONIC SYSTEM CONTRIOLS _____

COMPLEX HVAC SYSTEMS (503.4)

THE MECHANICAL SYSTEM IS A COMPLEX HVAC SYSTEM NOT COVERED BY SECTION 503.3 OF THE IECC. THE SIMPLE HVAC SYSTEM REQUIRMENTS DO NOT APPLY

ECONOMIZERS (503.4.1) _____

VAV FAN CONTROL (503.4.2) _____

HYDRONIC SYSTEM CONTROLS (503.4.3) _____

HEAT REJECTION EQUIPMENT FAN CONTROLS (503.4.4) _____

MULTIPLE ZONE SYSTEMS (503.4.5) _____

SINGLE DUCT VAV (503.4.5.1) _____

DUAL DUCT & MIXING VAV (503.4.5.2) _____

SINGLE FAN DUAL DUCT & MIXING VAV ECONOMIZERS (503.4.5.3) _____

HEAT RECOVERY FOR SWH (503.4.6) _____

SERVICE WATER HEATING SYSTEMS (403, 404, 504)

WATER HEATING EQUIPMENT

PREVAILING FEDERAL SWH EQUIPMENT STANDARDS (TABLE 404.5.2(1) (RES ONLY) _____

SWH EQUIPMENT EFFICIENCY (504.2 TABLE 504.2) _____

TEMPERATURE CONTROLS (504.3) _____

HEAT TRAPS (504.4) _____

PIPING INSULATION (403.4, 504.5) _____

HOT WATER SYSTEM CONTROLS (504.6) _____

SWIMMING POOLS (504.7) _____

ELECTRICAL POWER AND LIGHTING SYSTEMS (505)

LIGHTING CONTROLS (MANDATORY)

INTERIOR LIGHTING CONTROLS (505.2.1) _____

LIGHT REDUCTION CONTROLS (505.2.2.1) _____

AUTOMATIC LIGHTING SHUTOFF (502.2.2.2) _____

SLEEPING UNITS (505.2.3) _____

EXTERIOR LIGHTING CONTROLS (505.3) _____

TANDEM WIRING (505.3) _____

EXIT SIGNS (505.4) _____

INTERIOR LIGHTING POWER (505.5) PASS/FAIL

EXTERIOR LIGHTING EFFICACY (505.6.1) _____

EXTERIOR LIGHTING POWER (505.6.2) _____

SEPARATE METERING (505.7) _____

TABLE 505.6.2 EXTERIOR LIGHTING POWER FOR COMMERCIAL BUILDINGS		**AREA OR LENGTH**	**TOTAL WATTS**	**ACTUAL WATTS**
APPLICATION	**LIGHTING POWER DENSITY**			
TRADEABLE SURFACES (LIGHTING POWER DENSISISTIES FOR UNCOVERED PARKING AREAS, BUILDING GROUNDS, BUILDING ENTRANCES AND EXITS, CANOPIES AND OVERHANGS, AND OUTDOOR SALES AREAS MAY BE TRADED.)				
UNCOVERED PARKING AREAS				
PARKING LOTS AND DRIVES	0.15 W/ft^2			
BUILDING GROUNDS				
WALKWAYS LESS THAN 10 FEET WIDE	1.0 WATTS/LINEAR FOOT			
WALKWAYS 10 FEET WIDE OR GREATER PLAZA AREAS AND SPECIAL FEATURE AREAS	0.2 W/ft^2			
STAIRWAYS	1.0 W/ft^2			
BUILDING ENTRANCES AND EXITS				
MAIN ENTRIES	30 WATTS/LINEAR FOOT OF DOOR WIDTH			
OTHER DOORS	20 WATTS/LINEAR FOOT OF DOOR WIDTH			
CANOPIES AND OVERHANGS				
CANOPIES (FREE STANDING & ATTACHED & OVERHANGS	1.25 W/ft^2			
OUTDOORS SALES				
OPEN AREAS (INCLUDING VEHICLE SALES LOTS)	0.5 W/ft			
STREET FRONTAGE FOR VEHICLE SALES LOTS IN ADDITION TO “OPEN AREA” ALLOWANCES	20 WATTS/LINEAR FOOT			
NONTRADABLE SURFACES (LIGHTING POWER DENISITIES CALCULATIONS FOR THE FOLLOWING APPLICATIONS CAN BE USED ONLY FOR THE SPECIFIC APPLICATION AND CANNOT BE TRADED BETWEEN SURFACES OR WITH OTHER EXTERIOR LIGHTING. THE FOLLOWING ALLOWANCES ARE IN ADDITON TO ANY ALLOWANCE OTHERWISE PERMITTED IN THE TRADEABLE SURFACES SECTION OF THIS TABLE				
BUILDING FASCADES	0.2W/ft^{2}FOR EACH ILLUMINATED WALL OR SURFACE OR 5.0 WATTS/LINEAR FOOT FOR EACH ILLUMINATED WALL OR SURFACE LENGTH			
AUTOMATED TELLER MACHINES	270 WATTS PER LOCATION PLUS 90 WATTS PER ADDITONAL ATM			
ENTRANCES AND GATEHOUSE INSPECTION STATIONS AT GURADED FACILITIES	1.25 W/ft^2 OF UNCOVERED AREA			
LOADING AREAS FOR LAW ENFORCEMENT, FIRE AMBULANCE AND OTHER EMERGENCY VEHICLES	.05 W/ft^{2}OF UNCOVERED AREA			
DRIVE-UP WINDOWSAT FAST FOOD RESTAURANTS	400 WATTS PER DRIVE-THOUGH			
PARKING NEAR 24 HOUR RENTAL ENTRANCES	800 WATTS PER MAIN ENTRY			

FOR SI: 1 FOOT= 304.8, 1 WATT PER SQUARE FOOT= W/0.0929 M^2

INTERIOR LIGHTING POWER FOR COMMERCIAL BUILDINGS (505.4.2)

A	B	C	D	E
Building or Area[a] Type	**Lighting Power Allowance ($W/ft.^2$)**	**Area of Building or Space (sq. ft)**	**Allowed Watts (B x C)**	**Actual Watts[c]**
Automotive facility	0.9			
Convention Center	1.2			
Courthouse/ town hall	1.2			
Dining: Bar lounge/Leisure	1.3			
Dining: Cafeteria/Fast Food	1.4			
Dormitory	1.0			
Exercise Center	1.0			
Gymnasium	1.1			
Healthcare Clinic	1.0			
Hospital	1.2			
Hotel	1.0			
Library	1.3			
Manufacturing Facility	1.3			
Motel	1.0			
Multi-family	0.7			
Museum	1.1			
Office	1.0			
Parking Garage	0.3			
Penitentiary	1.0			
Performance Arts Theater	1.6			
Police Fire Station	1.0			
Post office	1.1			
Religious Building	1.3			
Retail[b]	1.5			
School/ University	1.2			
Sports Arena	1.1			
Town Hall	1.1			
Transportation	1.0			
Warehouse	0.8			
Workshop	1.4			

For SI: 1 foot = 304.8 mm, 1 $W/ft.^2$ = $W/0.0929\ m^2$

Total Allowed [d] Watts	**Total Actual [d] Watts**

a. In cases where both a general building area type and a more specific building area type are listed, the more specific building area type shall apply.

b. Where lighting equipment is specified to be installed to highlight specific merchandise in addition to lighting equipment specified for general lighting and is switched or dimmed on circuits different from the circuits for general lighting, the smaller of the actual wattage of the lighting equipment installed specifically for merchandise, or *1.6 $W/ft.^2$* times the area of the specific display but not to exceed 50% of the floor area, or 3.9 *$W/ft.^2$* times the actual case or shelf area for displaying and selling jewelry, china or silver, shall be added to the interior lighting power determined in accordance with this line item.

c. Actual watts = Number of fixtures x Watts per fixture.

d. Project compliance = Total Actual Watts must be less-than-or-equal-to Total Allowed Watts.